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MASTER OF MILITARY STUDIES

***TITLE*: THE NAVY'S BEST-KEPT SECRET: IS IUSS BECOMING A LOST ART?**

**SUBMITTED IN PARTIAL FULFILLMENT
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Abstract
There were a series of events that led to the consolidation and downsizing of the Integrated Undersea Surveillance System (IUSS). These events occurred simultaneously during a period when the United States was, defining its National Strategy toward the Soviet Union. What caused the IUSS Downsizing and consolidation? Budget cuts? End of the Cold War (Change in National Strategy)? The Dissolution of the Soviet Union as a threat? Base realignment and closure? Were the decisions made valid now that it is 2001, eight years after the consolidation?

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THERE WERE A SERIES OF EVENTS THAT LED TO THE CONSOLIDATION AND DOWNSIZING OF THE INTEGRATED UNDERSEA SURVEILLANCE SYSTEM (IUSS). THESE EVENTS OCCURRED SIMULTANEOUSLY DURING A PERIOD WHEN THE UNITED STATES WAS, DEFINING ITS NATIONAL STRATEGY TOWARD THE SOVIET UNION. WHAT CAUSED THE IUSS DOWNSIZING AND CONSOLIDATION? BUDGET CUTS? END OF THE COLD WAR (CHANGE IN NATIONAL STRATEGY)? THE DISSOLUTION OF THE SOVIET UNION AS A THREAT? BASE REALIGNMENT AND CLOSURE? WERE THE DECISIONS MADE VALID NOW THAT IT IS 2001, EIGHT YEARS AFTER THE CONSOLIDATION?

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EXECUTIVE SUMMARY

Title: THE NAVY'S BEST-KEPT SECRET: IS IUSS BECOMING A LOST ART?

Author: DAWN M. MASKELL, COMMANDER, U.S. NAVY

Thesis: The 60 percent downsizing experienced by the Integrated Undersea Surveillance System (IUSS) during the drawdown of the U.S. military forces after the fall of the Berlin Wall in 1989 was not fair share compared to the approximately 22 percent for the rest of the U.S. Navy. The decisions made then do not meet the antisubmarine warfare (ASW) requirements of today (2001).

Discussion. In 1994, IUSS downsized to exactly five sites left in the world. The difference was 75 percent fewer personnel were doing the same job, and trying to figure out new command relationships, learning how to operate new equipment, and learning new operating tactics.

What caused the IUSS downsizing and consolidation? Budget cuts? End of the Cold War (change in national strategy)? The dissolution of the Soviet Union as a threat? Base Realignment and Closure (BRAC)? Were the decisions made valid now that it is 2001, eight years after the consolidation?

Conclusion(s) or Recommendation(s). There was not a single event that led to the consolidation and downsizing of IUSS; it was a series of events that happened simultaneously. BRAC clearly did not cause the drastic downsizing of IUSS. There were five overarching factors that contributed to the downsizing of IUSS: January 1992 Commodores' Conference; September 1992 Congressional budget cut; Surveillance Towed Array Sensor System (SURTASS) U.S. General Accounting Office (GAO) study in December 1992; January 1993 Navy budget cut; Sound Surveillance System (SOSUS) GAO study in May 1993; and the 58 percent budget cut in December 1993. The GAO studies were conducted independently and prematurely, and had a predetermined outcome. The shroud of secrecy under which IUSS operated until the end of the Cold War, the user-unfriendly reports to tactical units in the fleet, and not having a supporting program sponsor with a vested interest in the system capabilities contributed to the perception by the DoN and GAO that IUSS is unable to detect submarines, including Russian diesel submarines. The emphasis on Dual Uses by the IUSS community contributed to the belief that there was not an operational requirement for IUSS.

The requirement for ASW has not gone away eight years later. The Soviets no longer deploy their submarines because of weapon capability (or lack of), but for political reasons. The capability of the system today is not what was intended in 1993. When balanced against DoN ASW requirements, IUSS took more than its fair share of the budget cuts during the DoN drawdown.

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Chapter 1

Introduction

In September 1994, Naval Facility Whidbey Island, Washington was in a state of extreme activity. Two months earlier, the Pacific Integrated Undersea Surveillance System (IUSS) was comprised of eight facilities; it was now one. There were exactly six IUSS sites left in the world. The mission had not changed, nor had the number of assets. The difference was 75 percent fewer personnel were doing the same job while simultaneously trying to figure out new command relationships, learning how to operate new equipment, and learning new operating tactics.

There were two things that led to the physical change in the IUSS. First was technology. Technology allowed for the consolidation of facilities, decreasing the number of personnel and the number of facilities in IUSS while maintaining all of the same operational capability. The other was the decrease in budget due to the drawdown of the Department of Defense (DoD) after the end of the Cold War. This action is called downsizing.

What caused the drastic change in the IUSS? More specifically,

1. What caused the IUSS downsizing and consolidation? Budget cuts? End of the Cold War (change in national strategy)? The dissolution of the Soviet Union as a threat? Base Realignment and Closure?

2. Do the decisions made in 1993 meet the antisubmarine warfare (ASW) requirements of today, eight years after the consolidation and downsizing?

The key to finding the answers to these questions lies in two main areas: interviews of those involved in the process at the time and documentation that exists today of those decisions. The individuals interviewed include personnel who spent their careers in IUSS covering the period 1968 to the present (2001). The individuals interviewed include:

1. Action officers on the Chief of Naval Operations (CNO) staff who worked the issues at the time of the consolidation and downsizing.

2. The commanders of both the Atlantic and Pacific type commands, both of whom were the chief staff officer prior to being commander, during the consolidation and downsizing.

3. An officer who was the executive officer at a Pacific IUSS facility during the consolidation and downsizing, then the enlisted training officer at the fleet training center, and is now the commanding officer of the same Pacific IUSS facility after the consolidation and downsizing.

Chapter 2

What is IUSS?

The Integrated Undersea Surveillance System (IUSS) is an ASW system owned and operated by the U.S. Navy. The system is made up of two parts: fixed assets, called Sound Surveillance System (SOSUS), and mobile assets, called Surveillance Towed Array Sensor System (SURTASS). SOSUS and SURTASS detect sounds in the water using hydrophones (listening devices) and the data is relayed to a processing center. The processing center is known as a Naval Ocean Processing Facility (NOPF or NAVOCEANPROFAC). Once the data is received by the NOPF, it is processed and displayed for analysis by passive acoustic analysts. Today, the enlisted rating that performs the analysis is called Sonar Technician (Surface) (STG).

The mission of IUSS is to provide support to ASW command and tactical forces by detecting, classifying, tracking, and providing timely reporting of information on submarines. There are four IUSS sites in the Navy today: NAVOCEANPROFAC Whidbey Island, Washington; NAVOCEANPROFAC Dam Neck, Virginia; Joint Maritime Facility (JMF), St. Mawgan, United Kingdom; and Commander, Undersea Surveillance (COMUNDERSEASURV), Norfolk, Virginia.

SOSUS

SOSUS is a network of cables and hydrophones, called arrays, laid on the ocean floor. Stations that processed only SOSUS (fixed arrays) data were called Naval Facilities (NAVFAC). Each array terminated at a building, called a T or terminal building, at the NAVFAC. More than one array may be terminated at a shore facility. When the acoustic data reaches the shore facility, it is processed and displayed for analysis by the STG. The acoustic data display is called a LOFARGRAM (Low Frequency Analyzer and Recorder Gram) (figure 1). An analyst goes to "A" school for about three months to learn the skill of reading a LOFARGRAM; however, analysis is an art and it takes analysts years (seven to ten) to become competent.

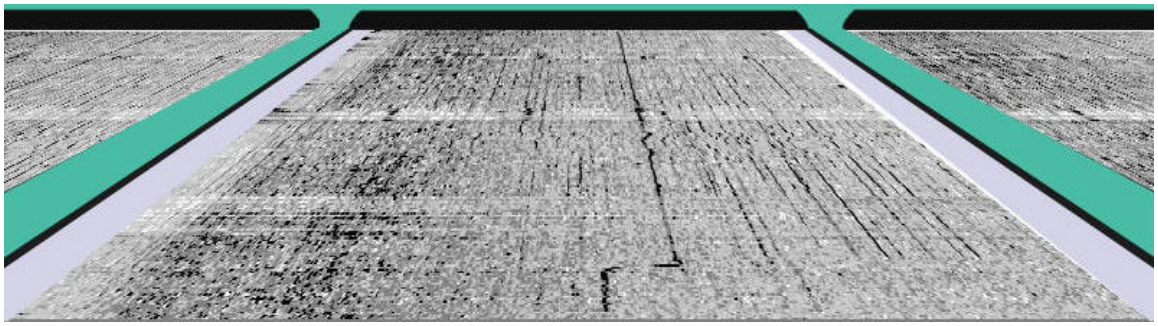

Figure 1: LOFARGRAM[1]

SURTASS

SURTASS is comprised of Military Sealift Command (MSC) ships that tow a 6,000-foot array (figure 2). There are two types of ships that have passive only capability: monohull (figure 3) and Small Waterplane Twin Hull (SWATH) (figure 4).

[1] "Integrated Undersea Surveillance System (IUSS) History 1950-1997," *The Cable: Official Website of the IUSS Caesar Alumni Association*, URL: <members.home.net/cybermed/indexe.htm>, accessed 2 January 2001.

Figure 2: SURTASS Array[2]

The ship designator for the SURTASS ships is T-AGOS (ocean surveillance ships). The design is based on mission duration of up to 90 days of array towing operation at three knots, with a maximum sustained speed in transit of 11 knots. The ship's complement of 23 includes the SURTASS technical personnel, known as the shipboard operations and maintenance (O&M) crew. A total of 23 shipboard personnel, 18 ship's crew and five SURTASS O&M crew, are typical. In order to facilitate real-time tactical reports to fleet units, a complement of three to five military analysts is deployed on board for either the duration of the exercise or operation, or the duration of the deployment. The military complement provides onboard acoustic analysis and tactical reporting directly to the fleet unit(s).

The third type of SURTASS ship is a research vessel that has both active and passive capability. The capability is called Low Frequency Active (LFA) and is installed on board R/V *Cory Chouest* (figure 5). In support of LFA operations, R/V *Cory Chouest* is

[2] "Ships, Shore, Equipment & Support," *PMW 182 Home Page*, URL: <www.trwiuss.com/pmw182/shipsequipment/>, accessed 6 January 2000.

SURTASS Monohull Ship

Length	224'
Maximum Beam	43'
Draft	15'1"
Displacement (tons)	2285
Engine Power (horsepower)	1600
Sustained speed (knots)	11.0
MSC Ship Crew	18
Shipboard O&M Technicians	5

Figure 3: Monohull SURTASS Ship[3]

equipped with a vertical line array, a multi-frequency horizontal line array receiver, as well as a passive array. LFA is restricted by environmental concerns and, therefore, operations have ceased until the concerns are resolved. She only conducts passive array operations today (2001).

[3] "MSC Ship Inventory," *Military Sealift Command Home Page*, URL: <www.msc.navy.mil/cgi-bin/ships.pl?ship=assertive&type=OceanSurveillanceShip>, accessed 6 January 2000. "Ships, Shore, Equipment & Support: Monohull T-AGOS," *PMW 182 Home Page*, URL: <www.trwiuss.com/pmw182/ShipsEquipment/tagos/monohull/index.htm>, accessed 6 January 2000.

SURTASS SWATH Ship

Length	234'6"
Maximum Beam	93'6"
Draft	24'9"
Displacement (tons)	3397
Engine Power (horsepower)	1600
Sustained speed (knots)	9.6
MSC Ship Crew	19
Shipboard O&M Technicians	5

Figure 4: SWATH SURTASS Ship[4]

Origins[5]

During World War II, the Germans used U-boat submarines extensively in the Atlantic Ocean against Navy escorted convoys. Keeping supply lines of communication open was then, and is now, a priority. As a direct result of the success of the German U-boats, the U.S. began experimenting with propagation of sound in the water and ways of detecting and localizing the source of the sound. In the 1940s, a system for locating fliers downed at sea was developed. The system was called Sound Fixing and Ranging

[4] "MSC Special Mission," *Military Sealift Command Home Page*, URL: <www.msc.navy.mil/PM2/ >, accessed 6 January 2000. "Ships, Shore, Equipment & Support: SWATH P T-AGOS," *PMW 182 Home Page*, URL: <http://www.trwiuss.com/pmw182/shipsequipment/tagos/swathp/index.htm>, accessed 6 January 2000.

[5] "Sound Ocean Surveillance System (SOSUS): The Origins of SOSUS," *Space and Naval Warfare Systems Command Home Page*, URL: <www.spawar.navy.mil/commands/CUS/pages/SOSUS.htm>, accessed 2 October 2000.

Figure 5: R/V *Cory Chouest*[6]

(SOFAR). In 1949, the Naval Research Laboratory (NRL) reported submarine detections using SOFAR hydrophones off Point Sur, California. That same year, a SOFAR station was opened in Bermuda.

With the advent of the Cold War, the Soviet Union began to develop the largest submarine force in the world. In 1950, the Navy Committee on Undersea Warfare (USW) recommended to the Assistant CNO a long-term program to meet the Soviet submarine threat. A small experimental system consisting of a cable terminated in a building owned by the U.S. Army and a few hydrophones were installed in shallow water. The project became known as Project Jezebel. In July 1951, an agreement was made with the British and a site was opened on Eleuthera Island, The Commonwealth of the Bahamas.[7] Project Jezebel proved so successful in detecting a U.S. submarine that it developed into a larger effort called Project Caesar.

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[6] "Ships, Shore, Equipment & Support: R/V *Cory Chouest*," *PMW 182 Home Page*, URL: <http://www.trwiuss.com/pmw182/shipsequipment/tagos/cory/index.htm>, accessed 6 January 2000.

[7] Location names are those that exist in 2001 to make it easier to locate the sites on today's maps.

Project Caesar was a program aimed at long-range detection and classification of submarines. In 1952, the CNO directed the procurement of six stations: Sable Island, Nova Scotia, Canada; Cape Hatteras, North Carolina; Bermuda; Eleuthera Island, The Commonwealth of the Bahamas; and Culebra, Commonwealth of Puerto Rico. The low frequency passive detection system was classified and became known as SOSUS; Project Caesar remained the unclassified name. By the end of 1952, the CNO increased the number of stations to nine and changed the location of some of the original sites: Sable Island, Nova Scotia, Canada; Nantucket, Massachusetts; Cape May, New Jersey; Cape Hatteras, North Carolina; Bermuda; San Salvador, The Commonwealth of the Bahamas; Grand Turk, Turks and Caicos Islands; and Ramey Field, Commonwealth of Puerto Rico. By May 1954, Barbuda, Antigua and Barbuda; Barbados; and Newfoundland, Canada were added to the Atlantic and ten stations were planned for the Pacific. SOSUS was now a part of the U.S. strategy for ASW and keeping the sea lines of communication open.

History[8]

It seems that once the technology proved it could detect submarines, SOSUS stations could not open fast enough. The engineers opened and closed numerous stations in the 1950s and 1960s, as one would expect in the early development and growth of a new system. Arrays (cable plus hydrophone) were laid based on predicted submarine operating patterns and a natural acoustic environment suitable for the laid array to detect

[8] "Integrated Undersea Surveillance System (IUSS) History 1950-1997," *The Cable: Official Website of the IUSS Caesar Alumni Association*, URL: <members.home.net/cybermed/indexe.htm>, accessed 2 January 2001.

submarine noise. Arrays that were laid and did not perform as predicted were turned off or moved to another location.

In all, there were 33 NAVFAC/NAVOCEANPROFACs (table 1) around the world. Each NAVFAC had from one to several arrays terminated at the site. In 1958, the number of NAVFACs and the amount of data being produced was such that a main evaluation center was established to correlate the data from the various sites prior to reporting to non-SOSUS commands. This evaluation center was called Commander, Oceanographic System Atlantic (COSL).

SOSUS established itself as a viable ASW force. In 1961, SOSUS tracked its first U.S. submarine, USS *George Washington*. NAVFAC Cape Hatteras, North Carolina made the first detection of a Soviet diesel submarine. NAVFAC Barbados made the first detection of a Soviet nuclear submarine. During the Cuban Missile Crisis, the SOSUS detection of a Soviet Foxtrot class diesel submarine was confirmed by the sighting of the submarine by a VP aircraft. This was the first positive correlation of a SOSUS contact. The first SOSUS detection of the loss of a submarine by the Soviets, a Golf SSB diesel submarine, occurred in 1968. SOSUS also detected its first Soviet Victor and Charlie class nuclear submarines that year. In 1974, SOSUS detected its first Soviet Delta class nuclear submarine. As each increasingly quiet new class of Soviet submarine appeared, there was initially little confidence that SOSUS could detect the submarine; however, SOSUS performed each and every time.[9] In 1973, U.S. General Accounting Office

[9] Captain John M. Parrish, U.S. Navy (Retired), Chief Staff Officer (1989-1991) and Commander (1991-1993) at Undersea Surveillance, telephone interview by author, 4 January 2001.

SITE	ESTABLISHED	DISESTABLISHED
Ramey, Puerto Rico	1954	1976
Grand Turk	1954	1980
San Salvador	1954	1970
Bermuda	1955	1992
Shelburne, Nova Scotia	1955	1994
Nantucket, MA	1955	1976
Cape May, NJ	1955	1962
Cape Hatteras, NC	1956	1982
Antigua	1956	1984
New York (evaluation center)	1956	1958
Norfolk, VA (evaluation center)	1956	1958
Eleuthera Island, Bahamas	1957	1980
Barbados	1957	1979
San Nicholas Island	1957	1993
COSL Norfolk, VA	1958	Exists today as CUS
Point Sur, CA	1958	1986
Centerville Beach, CA	1958	1993
Pacific Beach, WA	1958	1987
Coos Head, OR	1958	1987
Argentia, Newfoundland	1959	1994
Adak, AK	1962	1997
Lewes, DE	1962	1981
Keflavik, Iceland	1966	1996
COSP, Pearl Harbor, HI	1968	1994
Guam	1968	1992
Midway	1969	1983
Barbers Point, HI	1970	1985
Brawdy, Wales, United Kingdom	1974	1995
NOPF Dam Neck, VA	1980	Exists today
NOPF Ford Island, HI	1981	1994
NAVFAC Whidbey Island, WA	1987	Exists today as NOPF
HMCS Trinity, Halifax, Nova Scotia	1994	Transferred to Canada 1999
JMF St Mawgan, United Kingdom	1995	Exists today

Table 1: IUSS Facilities[10]

[10] Used two sources to gather this data. "Integrated Undersea Surveillance System (IUSS) History 1950-1997," *The Cable: Official Website of the IUSS Caesar Alumni Association*, URL: <members.home.net/cybermed/indexe.htm>, accessed 2 January 2001. (U) Lieutenant Commander R. L. Atkins, U.S. Navy, SECRET point paper, N874D, subject: "Integrated Undersea Surveillance System (IUSS) Consolidation Plan (U)," 31 August 1993. Classified by OPNAVINST S5513.5A; declassify on: Source marked "OADR."

(GAO) audited IUSS. GAO recognized SOSUS as a "force-multiplier" and recommended that SOSUS manning and budget be increased.

SOSUS played a critical role in locating two U.S. submarines after they disappeared. USS *Thresher* (SSN-593) went to sea on 10 April 1963 for deep diving exercises. Sixteen officers, 96 enlisted men, and 17 civilian technicians died when USS *Thresher* imploded at 1,400 fathoms (8,500 feet) 220 miles east of Boston.[11] On 21 May 1968, USS *Scorpion* (SSN-589) was last heard from heading west, 50 miles south of the Azores, returning from a Mediterranean deployment. She was located in 10,000 feet of water about 400 miles southwest of the Azores. The cause of her loss remains a mystery.[12]

SURTASS was designed and developed to provide mobile coverage to complement SOSUS. SURTASS began with the establishment of NAVOCEANPROFAC Dam Neck, Virginia in 1980 and NAVOCEANPROFAC Ford Island, Hawaii in 1981. A NOPF can process both SOSUS (fixed) and SURTASS (mobile) data. The first SURTASS ships, all monohull ships, were delivered in 1984. In 1992, the first SWATH ship was accepted. A total of 18 monohull and four SWATH hulls were commissioned.

The Navy resource sponsor for IUSS has changed numerous times over the years. SOSUS began under Bureau of Ships (BUSHIPS) in 1962. In 1964, Project Caesar was transferred from BUSHIPS to Industrial Manager, Potomac River Command and then to

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[11] "USS *Thresher* (SSN-593)," *Cyberspace Association of United States Submariners Home Page*, URL: <www.subnet.com/fleet/ssn593.htm>, accessed 6 January 2000.

[12] "USS *Scorpion* (SSN-589)," *Cyberspace Association of United States Submariners Home Page*, URL: <www.subnet.com/fleet/ssn589.htm>, accessed 6 January 2000.

CNO (OP-95), Director, ASW Programs. In the late 1980s, sponsorship of IUSS transferred from ASW Programs to Submarine Warfare where it remains today.

IUSS Today

SOSUS and SURTASS officially became known as IUSS in 1985. CNO (N774), Office of the CNO, Submarine Warfare Directorate, Undersea Surveillance Branch, is the resource sponsor for the IUSS. A single type commander (TYCOM), Commander, Undersea Surveillance, leads the system. NAVOCEANPROFAC Whidbey Island is responsible for IUSS assets from the west coast of the U.S., west to the Persian Gulf. NAVOCEANPROFAC Dam Neck is responsible for IUSS assets from the Mediterranean Sea, west to the east coast of the United States. JMF, a facility operated by both British and U.S. personnel, assists NAVOCEANPROFAC Dam Neck with their assets. (See figure 6.)

The NOPFs and JMF process, analyze, and report both SOSUS and SURTASS data. The SOSUS data is in a “hot standby” status; the arrays are turned on, the data is transmitted to the NOPF, but the data is not analyzed unless directed. Each coast has four SURTASS ships, four in the Atlantic and four in the Pacific.

Operational control (OPCON) of NAVOCEANPROFAC Whidbey Island assets is Commander in Chief, U.S. Pacific Fleet (CINCPACFLT); OPCON is delegated to Commander, Antisubmarine Warfare Forces, U.S. Pacific Fleet (COMASWFORPAC). OPCON of NAVOCEANPROFAC Dam Neck and JMF IUSS assets is Commander in Chief, U.S. Atlantic Fleet (CINCLANTFLT); OPCON is delegated to Commander, Antisubmarine Warfare Forces, U.S. Atlantic Fleet (COMASWFORLANT). Both NOPFs maintain tactical control (TACON) of their SURTASS assets. (See figure 7.)

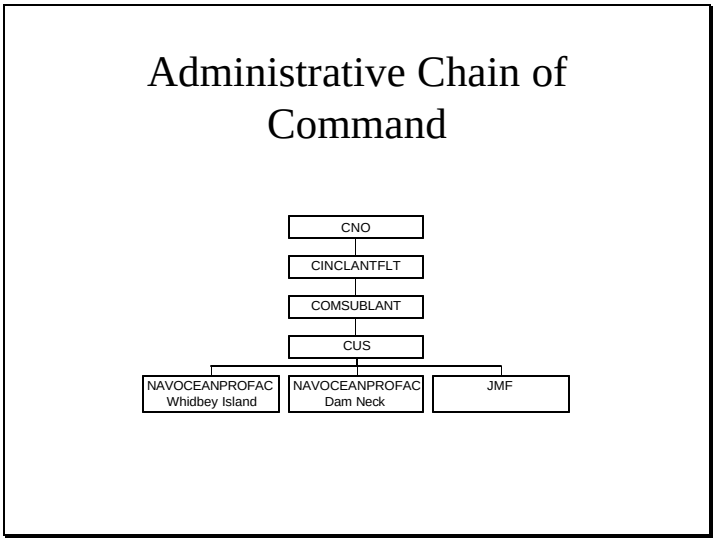

Figure 6: Administrative Chain of Command

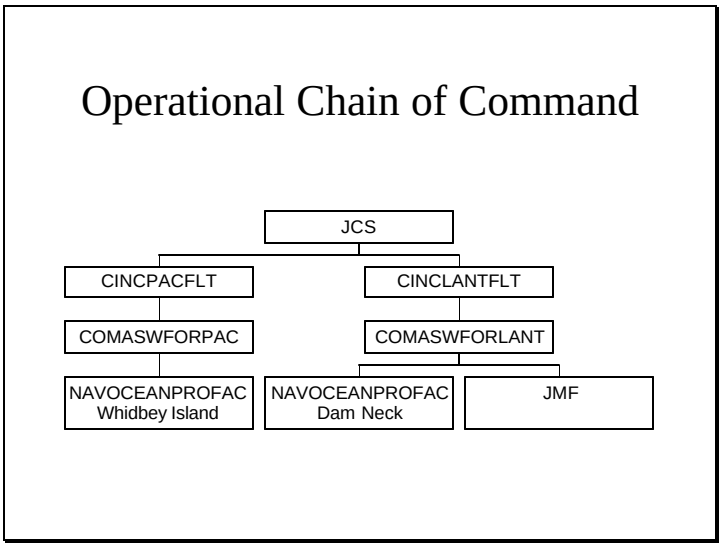

Figure 7: Operational Chain of Command

Chapter 3

IUSS Consolidation

Throughout the 1980s, ASW was a priority and IUSS had the manpower, budget and assets required to perform this function. IUSS employed over 4000 military personnel at 16 sites and 18 SURTASS ships around the world. When the Berlin Wall fell in November 1989, and the perceived immediate Soviet threat dissolved, the explicit mission of IUSS to detect Soviet submarines went away. By 1994, IUSS was downsized to approximately 1000 military personnel at four sites and eight SURTASS ships around the world. Why such a drastic cut?

One reason was consolidation. It was discovered that personnel were a significant part of the IUSS budget. Technology advanced so that acoustic data could be relayed elsewhere. To save costs and to streamline IUSS, consolidation occurred.

Ability To Relay Acoustic Data To Remote Sites

The system command for IUSS, Space and Naval Warfare Systems Command (SPAWAR), has a history of trying to stay on the leading edge of technology. The SPAWAR Fixed Systems (SOSUS) Directorate (PMW-181) developed ways to allow SOSUS arrays to remain where they were, terminate at their current location, and send the acoustic data to another NAVFAC or NOPF for processing, analysis, and reporting without having a local processing center tethered to every array.

This was a great budget saving effort. Numerous NAVFACs were located at isolated locations. They were, therefore, not only a SOSUS station but a naval base as well, with the entire support infrastructure. By remoting the acoustic data, the naval base could be closed, the array left in place at the NAVFAC, the NAVFAC left unmanned, and the acoustic data sent to another IUSS facility. This saved manpower and base operating support (BOS) costs.

SOSUS Consolidation

Throughout its history, IUSS shut down arrays or closed facilities as the operational need arose. The array shut downs were based upon cost benefit analysis. Arrays were constantly evaluated to determine the amount of contact (submarine) detection time versus the cost to maintain that array. As shown in table 1, IUSS was already closing sites in the years leading up to consolidation. In the Pacific, the arrays that terminated at both Pacific Beach, Washington and Coos Head, Oregon were remoted to NAVFAC Whidbey Island in 1987. The arrays terminated at NAVFACs Midway, Guam, and Barbers Point, Hawaii, were shut down in between 1990 and 1992. The array at San Nicolas Island was given to scientific researchers in 1993. In the Atlantic, the array(s) terminated at Bermuda were remoted to NAVOCEANPROFAC Dam Neck in 1992.

Consolidation efforts started prior to the end of the Cold War and the associated Department of the Navy (DoN) budget cuts and studies. IUSS was consolidating facilities as early as 1987 in order to streamline the system and to redirect monies used for facility maintenance to array O&M. At the end of consolidation in 1994, IUSS consisted of two NOPFs, JMF, and a main evaluation center at COMUNDERSEASURV.

BRAC

The Defense Authorization Amendments and Base Closure and Realignment Act of 1988 (Pub. L. 100-526) was enacted October 24, 1988.[13] The Act mandated the closure of all military installations recommended for closure by the Base Realignment and Closure (BRAC) Commission. Closures were to be initiated not later than 30 September 1991 and completed not later than 30 September 1995. IUSS was subject to many data calls from the BRAC commission. BRAC did not specifically close any IUSS facilities; however, Naval Air Facility (NAF), Adak, Alaska was closed due to BRAC. This action affected NAVFAC Adak that was located on NAF Adak. No military facilities were allowed to remain operating on the island; therefore, NAVFAC Adak and its associated arrays were closed and shut down. [14]

SURTASS Drawdown

At the end of the Cold War, there were 19 SURTASS ships. SURTASS was developed for, and the requirements delineated in the Required Operational Capability (ROC)/Projected Operational Environment (POE) were for, a deep ocean, blue water, Soviet submarine threat. At CNO direction, the Navy began a drawdown of SURTASS

[13] Defense Authorization Amendments and Base Closure and Realignment Act of 1988 (Pub. L. 100-526).

[14] Result of three interviews. Captain Marnee L. Finch, U.S. Navy, Operations Officer (April 1990 - 1992), Chief Staff Officer (1992 - January 1993) and Commander (August 1993 - September1994) at Undersea Surveillance, U.S. Pacific Fleet, and Commanding Officer, Naval Facility, Whidbey Island, WA June 1987 – April 1990, telephone interview by author, 1 December 2000. Parrish. Commander Carol A. Wilder, U.S. Navy, Executive Officer at Naval Facility, Whidbey Island, WA 1993-1995, Enlisted Training Officer at Fleet Antisubmarine Warfare Training Center 1995-1998, Commanding Officer at Naval Facility, Whidbey Island, WA 2000 - present (2001), telephone interview by author, 18 December 2000.

ships in 1991.[15] The SURTASS fleet went from 19 to eight; four ships in each fleet. The ROC/POE was not updated until at least mid-1993. Because of the significant decrease in the number of SURTASS ships, the number of personnel required to maintain and analyze the data decreased. Theoretically, half the number of ships requires half the number of personnel. It also meant not as many NOPFs were required.

1992 Commodores' Conference

The commander of both TYCOMs in the Atlantic and the Pacific were commodores. Each year they met with the Office of the CNO, Submarine Directorate, Head, Undersea Warfare Branch to discuss the issues pertaining to IUSS. IUSS consolidation was discussed at the January 1992 conference.[16]

IUSS experienced numerous small budget cuts over the two years after the end of the Cold War (1990-1991). In 1992, a major budget cut was probably in the not too distant future and possible consolidation initiatives were discussed. It was discovered that the real cost of IUSS (SURTASS and SOSUS) was the manpower. Manpower was the most expensive portion of the system to fund. Therefore, it was determined, decrease the number of personnel required to run IUSS to increase savings to be used for O&M of IUSS.

The recommendation from the conference was to close all of the IUSS sites except NAVOCEANPROFAC Dam Neck. The acoustic data from all of the arrays in the world

[15] (U) Commander, Undersea Surveillance, U. S. Atlantic Fleet, SECRET letter to Director of Naval History (OP-09BH), 5750 Ser N1/S100, subject: "Command History (Report Control Symbol OPNAV 5750-1)," 13 July 1992. Classified by OPNAVINST S5513.5A; declassify on: Source marked "OADR."

[16] Parrish.

could be remoted to NAVOCEANPROFAC Dam Neck for analysis and reporting. Closing the IUSS bases would allow all of the costs associated with manpower and BOS to be used for O&M of the system. The cost savings was estimated to be $35 million - $40 million. The only drawback was there would be no system redundancy. The CNO staff was briefed in spring 1993.

Budget Cuts

IUSS experienced budget cuts, as did the rest of DoD, with the fall of the Berlin Wall. "In September 1992, Congress reduced the fiscal year 1993 budget request by about $10 million and, in January 1993, Navy officials responsible for SOSUS told us [GAO] that the Navy withdrew another $55 million from the previous SOSUS allocation for fiscal year 1993."[17] In December 1993, the largest budget cut in IUSS history took effect: 58 percent. As stated by CNO,

> Ref A [CNO 270001Z August 1992 SECRET message stating CNO approval of IUSS consolidation plan] detailed CNO approved IUSS consolidation plan developed to improve operational effectiveness and reduce operating costs. Since its approval, additional significant reductions totaling $753M in Sound Surveillance System (SOSUS) funding across fiscal years 95-99 (approximately 58 percent) were made during FY-95 budget program review. These budgetary constraints have dictated modifications to this plan, and as a result, SOSUS will be placed in a standby status and the Undersea Surveillance mission will be primarily accomplished using Surveillance Towed Array Sensor System (SURTASS) assets. . . . On board personnel will be used to immediately reestablish near term limited SOSUS surveillance capabilities to meet emergent needs. . . . Shore sites will continue to maintain SOSUS

[17] (U) General Accounting Office, *Antisubmarine Warfare: Opportunity to Reduce Navy's Sound Surveillance System* (U), SECRET study, GAO/C-NSIAD-93-4, May 1993, 2. Classified by: DOD/OASD(PA); declassify on: Source marked "OADR."

> equipment at minimal levels. Additional spares inventory may be required to maintain capability to reconstitute equipment at required levels. [18]

The IUSS resource sponsor at CNO experienced numerous budget calls between 1989 and 1995. Unfortunately, IUSS did not win many of the budget calls. According to a former action officer on the CNO staff at the time, the IUSS budget was divided into three line items that did not correlate to functions within IUSS. The Congressional marks were usually against two or more line items. Unfortunately, when the dollars were actually applied against IUSS, one major function usually was affected. Thus, Congressional budget cuts tended to have a larger impact than intended. The CNO staff was not successful in submitting a reclama in most cases. At the height of the DoN drawdown in 1993, IUSS took over a cumulative 60 percent budget cut since 1989. This was not fair share given the U.S. Navy approximately 22 percent budget cut over the same time frame.[19]

GAO Study of SURTASS

In 1991, Mr. Sean O'Keefe, Acting Secretary of the Navy, requested that GAO conduct a study to examine "(1) how the submarine threat environment has changed and (2) what changes the Navy has proposed regarding its SURTASS program."[20] At the time of the report, there was no longer a Soviet threat, the Navy's ASW focus was littoral

[18] (U) Chief of Naval Operations, SECRET message to Commander in Chief, U.S. Pacific Fleet, and others, subject: "Integrated Undersea Surveillance System Consolidation (U)," 281420Z December 1993. No originating classification authority. Declassify on: Source marked "OADR."

[19] U.S. Navy budget figures for 1989 and 1993 obtained from U.S. Navy, "Vision . . . Presence . . . Power," *A Program Guide to the U.S. Navy 2000 Edition*, n. p., n. d., 106.

[20] General Accounting Office, *Undersea Surveillance: Navy Continues to Build Ships Designed for Soviet Threat*, Study, GAO/NSIAD-93-53, December 1992, 1.

(shallow) water, and the Navy had 19 SURTASS ships. The GAO National Security and International Affairs Division conducted the study between November 1991 and July 1992. The study recommendations were published December 1992.

The assumptions made by the GAO were:[21]

1. Navy's primary ASW target was the open ocean, deep water Soviet nuclear attack submarine.
2. Diesel submarines in coastal, shallow water areas were largely disregarded as threats.
3. SURTASS provided coverage in areas where there was no fixed system (SOSUS) coverage.
4. Navy did not have documented and approved requirements for undersea surveillance systems to counter the regional submarine threat.
5. SURTASS not thoroughly tested in shallow water.
6. Navy continued to build new SURTASS ships designed for Soviet submarine threat.

Before determining their findings, the GAO consulted over 14 DoD and contracted agencies including SPAWAR, Defense Intelligence Agency, Office of the Chief of Naval Operations (Undersea Warfare) Undersea Surveillance Division, and NAVOCEANPROFAC Dam Neck. GAO recommended to the Secretary of the Navy that the Navy postpone the decision to build T-AGOS-24 until the LFA operational performance was fully evaluated, and that the Navy reevaluate plans to buy T-AGOS-25 through T-AGOS-27 until the submarine threat was defined and the requirements documented and approved. The report stopped all SURTASS production.

[21] General Accounting Office, *Undersea Surveillance: Navy Continues to Build Ships Designed for Soviet Threat*, Study, GAO/NSIAD-93-53, December 1992, 10.

GAO Study of SOSUS

In 1993, the GAO conducted a study of SOSUS. GAO was not tasked to conduct the study. GAO submitted the study to Senator Daniel K. Inouye, Chairman, Subcommittee on Defense, Committee on Appropriations, U.S. Senate; and Congressman John P. Murtha, Chairman, Subcommittee on Defense, Committee on Appropriations, House of Representatives. The GAO National Security and International Affairs Division conducted the study between September 1991 and December 1992. The study recommendations were published in May 1993.

The purpose of the study was:

> As part of our [GAO] continuing work on antisubmarine warfare issues, we [GAO] reviewed SOSUS to determine whether the Navy's antisubmarine warfare plans reflect changes in the threat and whether there are opportunities to reduce Navy costs. This report is addressed to you [House and Senate] because it contains information that will be useful to your subcommittees in deliberating the fiscal year 1994 Department of Defense (DOD) budget.[22]

The study interpreted IUSS to mean SOSUS, SURTASS, the Fixed Distributed System (FDS), and other elements that it did not define. The GAO team considered the level of risk with its recommendations; IUSS coordination operations with air, surface and subsurface, and other intelligence assets; and the fact that the Soviets did not deploy their submarines as far now that they had the capability of long range weapons. Before determining their findings, the GAO team consulted the Office of the Secretary of

[22] (U) General Accounting Office, *Antisubmarine Warfare: Opportunity to Reduce Navy's Sound Surveillance System* (U), SECRET study, GAO/C-NSIAD-93-4, GAO May 1993, 1. Classified by: DOD/OASD(PA); declassify on: Source marked "OADR."

Defense, the Office of the Secretary of the Navy, the Defense Intelligence Agency, and subordinate commands responsible for ASW that the report does not define.

The GAO team evaluated three options:[23]

1. Option 1: Retain 24 hour a day surveillance capability, fleet training support, and remote some facilities. The GAO claimed the U.S. Navy supported this option.

2. Option 2: Same as option 1; however, inactivate (powering down) some arrays. The GAO claimed the Fleet supported this option.

3. Option 3: Same as options 1 and 2; however, decrease staffing to a level to support acoustic analysis only in sectors where needed.

The GAO team did not define who they meant by "U.S. Navy" and "the Fleet" when stating their options. The GAO team recommended:

> We recommend to the Secretary of Defense:
>
> - Offer to rescind or reprogram from the fiscal year 1993 SOSUS appropriations the $55 million the Navy has decided not to release to the program, plus any additional amounts that result from implementing our [GAO] second or third option, and
>
> - Direct the Secretary of the Navy to review SOSUS planned expenditures for fiscal year 1994 through 1998 for additional reductions based on the differences between the Navy's desired level of operations and our options.[24]

A former action officer on the CNO staff recalled the following about interaction with the GAO team during the study: [25]

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[23] (U) General Accounting Office, *Antisubmarine Warfare: Opportunity to Reduce Navy's Sound Surveillance System* (U), SECRET study, GAO/C-NSIAD-93-4, GAO May 1993. Classified by: DOD/OASD(PA); declassify on: Source marked "OADR."

[24] (U) General Accounting Office, *Antisubmarine Warfare: Opportunity to Reduce Navy's Sound Surveillance System* (U), SECRET study, GAO/C-NSIAD-93-4, GAO May 1993, 12. Classified by: DOD/OASD(PA); declassify on: Source marked "OADR."

[25] A source, former Action Officer at Office of the Chief of Naval Operations, who wishes to remain anonymous, telephone interview by author, 6 December 2000.

1. The GAO team had a preconceived outcome to their study; they had an agenda. The premise of the study was that SOSUS should be shut down completely.

2. GAO was tasked by the Senate to conduct a study to review if there was still a requirement for SOSUS. [This is contrary to what is stated in the study. GAO was not tasked by any other government agency to conduct the study.]

3. GAO team did review the IUSS consolidation plan in existence at the time.

4. Throughout most of the study, the GAO team believed reconstitution was the answer.

5. The study time line was short-fused and fast tracked.

The initial recommendation by the GAO to CNO was to shut down SOSUS entirely and be prepared to reconstitute an array or arrays when needed.[26] This assumption was not accurate. Most of the SOSUS arrays were operating with parts that were over 40 years old. Once these arrays were powered down, the probability of powering them back up and having them fully operational was extremely low. Reconstitution was not possible; however, consolidation of the IUSS facilities was. The CNO staff briefed the team on the 1992 Commodores' Conference; i.e., the cost of IUSS is in the people and the benefits of consolidation.

In the process of conducting the study, the GAO team became convinced that array shut down and reconstitution was not feasible. The GAO recommendations were a compromise between reconstitution and consolidation down to one site. The CNO staff did submit a reclama, but according to the former action officer on the CNO staff interviewed, the GAO report went to the Senate without the reclama. The study focused on SOSUS; it did not address SURTASS or FDS at all.

[26] A source, former Action Officer at Office of the Chief of Naval Operations, who wishes to remain anonymous, telephone interview by author, 6 December 2000.

Chapter 4

IUSS Downsizing

The other factor contributing to the decrease in number of IUSS sites in 1994 was downsizing. Downsizing is the reduction in manpower and assets due to budget cuts that IUSS had no control over, i.e., mandated by Congress or within DoD. There were several factors that contributed to downsizing.

Lack of Documented Requirements for IUSS

The document the DoN and DoD use to determine how to fund or budget for a program is the ROC/POE. Every command/unit should have a ROC/POE whose requirements are approved by the Office of the CNO. A command/unit's CNO program sponsor, in IUSS's case, CNO (N774), generates it. The ROC consists of statements that detail the capabilities required of a particular ship, squadron, or unit. The POE consists of statements that describe the environment in which the ship, squadron, or unit is expected to operate, including the military climate (e.g., at sea, at war, etc.). If what a unit does is not specified in the ROC/POE, funding, most likely, is not provided to support that capability.

The development of the ROC/POE by the CNO staff is based on fleet requirements. A unit's TYCOM assigns its Mission, Functions, and Tasks (MF&T). The CNO program sponsor then bases the ROC/POE on the MF&T. Changes to a MF&T or ROC/POE

drive a change to requirements. COMUNDERSEASURV develops the MF&T for each NAVFAC/NOPF.

IUSS was not quick enough in updating its MF&T or ROC/POE. As with the rest of DoD, IUSS was caught by surprise with the fall of the Berlin Wall in 1989. IUSS was trying to figure out what/who the threat was and how to combat that threat. Unfortunately, because IUSS was in a state of flux at the time of the Congressional marks driven by the downsizing of DoD and the GAO study, cuts were made because there were no written requirements for IUSS against the shallow water diesel submarine.

I was temporarily assigned duty at CNO (N774) in the summer of 1993. One of my projects was to update the ROC/POE; it was not signed until March 1995. A valid ROC/POE was not in existence at the time of the GAO studies in December 1992. Nor was it signed in time for the 58 percent budget cut in December 1993. With no valid, documented requirements for IUSS, decisions were made on old operational requirements. In fact, the SURTASS GAO Report noted, "we note that as of the date of this report, the Navy has neither developed requirements for the regional threat nor updated deep water requirements for SURTASS ships. Until this is performed, there is no assurance that additional ship procurement is justified to meet a deep water threat."[27]

Shroud of Secrecy

SOSUS was a classified system, verging on special compartmented information, from its inception. Although only classified secret, the program was closely held even

[27] General Accounting Office, *Undersea Surveillance: Navy Continues to Build Ships Designed for Soviet Threat*, Study, GAO/NSIAD-93-53, December 1992, 12-13.

within the DoN. Access to the program and the system was given on a need-to-know basis.[28]

In the mid-1980s when IUSS began to realize the importance of making acoustic data more tactical, IUSS began advertising the IUSS within the DoN. I remember submarine crews, as well as students from ASW-oriented schools, touring our facilities. When I returned as Operations Officer at NAVFAC Whidbey Island in 1994, the story had not changed much. Submariners had knowledge of IUSS but did not believe it could detect them. It wasn't until we asked which boat they were from and we showed them numerous LOFARGRAMs of their boat that we were believed.

During my interviews with CAPT John L. Parrish, USN (Retired)[29] and a former action officer at the Office of the CNO,[30] they both confirmed the same thing: no one in the U.S. Navy knew the capabilities of IUSS. CAPT Parrish, who worked in IUSS from 1968 until his retirement in 1993, said he fought that battle his entire career. The former CNO staff action officer stated that during numerous Congressional budget drills and GAO audits, there was a belief that IUSS could detect ONLY Soviet submarines. It took a lot of explaining about the basic principles of the physics of underwater sound and acoustics to convince people that IUSS can detect anything that makes noise in the water, including other than Soviet submarines. IUSS has not come much further today (2001).

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[28] Parrish.

[29] Parrish.

[30] A source, former Action Officer at Office of the Chief of Naval Operations, who wishes to remain anonymous, telephone interview by author, 6 December 2000.

Those involved in IUSS realized that few within our own Navy knew about IUSS. They also realized that in order for IUSS to survive in the era of DoN downsizing, the shroud of secrecy had to go away. The mission of IUSS was declassified in 1991.

Not Speaking "Fleet Speak"

In order for any system to survive in the U.S. Navy, it must be supported by and have a use in the Fleet. IUSS did not have the support of the Fleet until the early 1990s. Although IUSS was providing the Fleet with ASW data, the information was not published in "Fleet speak."

The IUSS product was published to the Fleet via a RAINFORM only until the early 1990s. The RAINFORM is a pro-forma message that is strictly formatted. There are required entries in every field, and entries are sometimes in plain English or are a code. The RAINFORM is not easy to read unless you 1) are intimately familiar with the RAINFORM format and 2) have an understanding of the data entered into the RAINFORM. It wasn't until IUSS started sending liaison officers aboard destroyer squadron (DESRON) staffs that it was discovered that tactical units were totally disregarding IUSS data purely because they had no clue what the message said. There is not time in a tactical environment to pull out the publications and sort through the message line by line. It quickly became apparent that the reason the Fleet did not know about IUSS was because they were not using IUSS data -- and it was IUSS's fault.

In the late 1980s and early 1990s, IUSS changed the way it reported data to the tactical units. In addition to RAINFORMs, IUSS began to report via tactical voice circuits and JOTS, a tactical computer system that provided instantaneous access to the operational picture. IUSS used JOTS to send OTH-Gold messages and open form

messages (like e-mail) to the tactical users. Thus, with information in user-friendly form, the Fleet finally started using IUSS data, but well after the end of the Cold War.

IUSS was speaking their language. It was too late. The budget cuts of the early 1990s had taken effect before the Fleet realized the importance of IUSS data. The system had already downsized.

Apparent Self-Closure of IUSS

Because of the number of array shut downs and decrease in the number of SURTASS ships due to operational need or cost effectiveness, it appeared that IUSS was shutting itself down. It was not apparent to anyone without a need-to-know that just because a facility closed did not mean the data was no longer available. The data from a closed NAVFAC or NOPF could have been remoted to another site. I believe the significant number of NAVFAC closures (five) and SURTASS ship decommissionings (11) between 1990 and 1993 contributed to the belief that there was no longer a need for IUSS. If IUSS was closing itself down, why should the Navy support IUSS?

Old Technology

SOSUS was installed beginning in the 1950s. Since the arrays are fixed to the ocean floor, any modification or upgrade is extremely expensive and not necessarily cost beneficial. Therefore, implementation of any advances in technology meant brand new arrays, oceanographic surveys to find the optimum location for the new array, and a facility to process the data. There were arrays operating in 1992 that were almost 40 years old.

Many believed that since the technology was old, the arrays could not detect newer quieter submarines, at all.[31] What most did not understand was that the submarines operating in the 1950s through 1980s were still operating at the time, and IUSS was detecting them. In fact, IUSS is the primary cuing source today for most submarine detections by air, surface or subsurface platforms.

GAO Reports

The GAO reports appear to have been conducted independent of each other without considering the context of ocean surveillance as a whole. The SOSUS study recommended cuts without considering SURTASS, and the SURTASS study recommended cuts without considering SOSUS. The SURTASS study assumed SOSUS would remain as is and the reduction in SURTASS ships would not have a significant impact, and vice versa. What GAO incorrectly assumed was that 1) SURTASS "augmented the fixed Sound Surveillance System by collecting acoustic data in areas where there is no fixed system coverage,"[32] and 2) " . . . the Navy utilizes its existing Sound Surveillance System for deep ocean surveillance,"[33] implying that SOSUS could provide the required deep ocean surveillance without SURTASS. As stated by a former

[31] Parrish. A source, former Action Officer at Office of the Chief of Naval Operations, who wishes to remain anonymous, telephone interview by author, 6 December 2000.

[32] General Accounting Office, *Undersea Surveillance: Navy Continues to Build Ships Designed for Soviet Threat*, Study, GAO/NSIAD-93-53, December 1992, 2.

[33] General Accounting Office, *Undersea Surveillance: Navy Continues to Build Ships Designed for Soviet Threat*, Study, GAO/NSIAD-93-53, December 1992, 38.

CNO staff action officer[34] and the GAO report, it is evident that neither GAO study group understood the correlation between SOSUS and SURTASS.

The purpose of SURTASS is two fold: to provide coverage where SOSUS is non-existent and to provide coverage to augment SOSUS. In other words, the IUSS use of SURTASS to provide a cross-fix with a SOSUS array or arrays to better localize a target. SURTASS enhanced SOSUS by allowing for varying array locations (mobile) instead of covering the ocean floor with fixed arrays.

Dual Uses of IUSS

IUSS was lost without a tangible mission the day after the Berlin Wall fell. For almost 40 years, IUSS detected and reported submarines, mainly Soviet. IUSS was the primary cuing system used by other ASW platforms to localize and put weapon on target. IUSS was and remains a key player as an indications and warning (I&W) source.[35] Like almost every other platform in the Navy without a mission, IUSS began to look for requirements other than the Soviet threat. This effort was called Dual Uses, meaning the data can be used for both DoD and non-DoD efforts.

In 1992, CAPT Parrish as COMUNDERSEASURV began the effort to look for another use for IUSS.[36] The uses included university, civilian scientists, and law enforcement, as well as other non-ASW DoD agencies. The efforts included detecting volcanic activity, seismic activity, and tracking mammals to determine exact migration

[34] A source, former Action Officer at Office of the Chief of Naval Operations, who wishes to remain anonymous, telephone interview by author, 6 December 2000.

[35] Finch.

[36] Parrish.

patterns for scientific research. I remember one of the scientists saying that IUSS collected more unanalyzed LOFARGRAM data in 24 hours than the scientific community had collected in its history. The government-oriented efforts included tracking surface vessels, called white shipping. IUSS was able to locate and track specific surface vessels and assist law enforcement agencies in locating illegal fisheries and counter-drug operations. The program was so successful that Joint Interagency Task Force, East bought three SURTASS ships and is using them for counter-drug operations today.

Unfortunately, the Dual Use program was pushed so strongly that the Navy believed that was all IUSS could do. It was to the point that the IUSS personnel were so discouraged about what they were doing that they felt they no longer had a mission. The Dual Use programs did not support a Navy requirement. If members of the IUSS community believed that Dual Uses was the only use for IUSS, it makes sense that that is what Congress, GAO, and other CNO staff members must have thought as well.

Making Decisions Based Upon Future Procurement

At the time the Berlin Wall fell in 1989, IUSS had several new technologies under investigation. They were FDS, LFA, and Advanced Deployable System (ADS). FDS is an ocean surveillance system that employs seabed acoustic sensors distributed over large ocean areas. ADS is a littoral water deployable undersea surveillance system.[37] At the time of the GAO Report in 1992 and 58 percent budget cut in 1993, FDS had just begun

[37] "Fixed Distributed System (FDS) and Advanced Deployable System (ADS)," *Director, Operational, Test & Evaluation Home Page*, URL: <www.dote.osd.mil/reports/FY99/navy.99fds.html>, accessed 7 January 2000.

to be procured and installed, LFA was in the experimental stage, and ADS was in the research and development (R&D) process. The Navy expected to have six LFA SURTASS ships by 1994 and ADS was to be produced in FY05. Because of the budget cuts over the years, production of the original version of FDS ceased and transitioned to a commercial off-the-shelf (COTS) version, LFA has ceased due to environmental concerns, and ADS has slipped to FY06. Any further cuts to the IUSS budget will cause these programs to slip even more to the right, or, quite possibly, be terminated.

Submarine Community as Warfare Sponsor

CNO (N774), N874 at the time, is the IUSS program resource warfare sponsor. N874 (Office of the Chief of Naval Operations (Undersea Warfare) Undersea Surveillance Division) reported to N87, the Submarine Warfare Division. N87 reported to N8, Resources, Warfare Requirements and Assessments. IUSS did not have the same support it received when the CNO staff was organized with an ASW Development Programs directorate. N874, as part of N87, priority was submarines, not ASW. CAPT Parrish stated that he believes, for this very reason, the dollars saved with IUSS consolidation were used to contribute to the funding of the third Seawolf submarine.[38] A former CNO staff action officer confirmed this.[39] The surface warfare community manages the enlisted rating (STG), including training, for IUSS.

The sponsorship of IUSS is not clear. On the one hand, IUSS program sponsorship was from the submarine community whose interest, as it should have been, was

[38] Parrish.

[39] A source, former Action Officer at Office of the Chief of Naval Operations, who wishes to remain anonymous, telephone interview by author, 6 December 2000.

submarines, not ASW from platforms other than submarines. On the other hand, the training of the IUSS operators was the responsibility of the surface community. Both sponsors managed the IUSS community separately.

Chapter 5

Impact of Consolidation and Downsizing

Consolidation and downsizing occurred simultaneously. As a result, there was a significant decrease in manpower, budget, operations and training.

Concept of Operations

How did IUSS change to meet the downsizing? IUSS was performing the same mission with the same assets with the closure of all but one NAVFAC in the Pacific and three facilities (COMUNDERSEASURV, NAVOCEANPROFAC Dam Neck and JMF) in the Atlantic. The difference was instead of over 4000 personnel performing the functions, one quarter of the personnel (1000) were assigned to the remaining commands.

In August 1994, COMUNDERSEASURV directed:[40]

> Per ref a [CNO 281420Z December 1993 SECRET message announcing the 58 percent budget cut], all Pacific IUSS fixed arrays will be placed in "hot standby" 30 Sep 94. Data will be available for analysis at NAVFAC Whidbey Island but personnel will not be routinely assigned to monitor fixed array data. SURTASS monitoring will take precedence over fixed array monitoring. NAVFAC Whidbey Island is manned to monitor 4 SURTASS ships and will have the capability to monitor fixed arrays whenever less than 4 SURTASS ships have deployed arrays. If data from the fixed arrays is desired for a particular exercise or project, this must be specifically requested from CTF 12 [COMASWFORPAC].

[40] (U) Commander, Undersea Surveillance, U.S. Pacific Fleet, SECRET message to Commander, Third Fleet, and others, subject: "Pacific Integrated Undersea Surveillance System Concept of Operations (U)," 052113Z August 1994. No originating classification authority. Declassify on: Source marked "OADR."

This requirement caused much confusion with the operators. First and foremost, how do you tell an analyst not to even look at real-time acoustic data when he/she knows there could possibly be a contact displayed? Second, what does "hot standby" really mean? Do you leave the array powered up but turn off the display equipment to conserve the equipment? Or, do you display the data and ignore it? No guidance was provided, so each site decided to display but not analyze the acoustic data. Third, how do you tell an operating, tactical unit that unless your higher authority directs the requirement, you cannot provide assistance or cuing? This not only discourages the tactical unit from asking in the future but it makes the process too hard.

I was assigned as Operations Officer at NAVOCEANPROFAC Whidbey Island when this guidance came out. Once we decided that all acoustic data would be displayed, we began the process of determining how many personnel it takes per watch section to analyze the required data (basically four passive arrays, SURTASS or SOSUS). Once this was determined, we discovered that a watch section could properly analyze all SURTASS data plus SOSUS spotlight coverage. Spotlight coverage meant the analyst determined which sector of the array could possibly have a contact and only analyzed that sector. This cut down on the workload and still provided the fleet units with the cuing required. Because of advancements in acoustic display technology (computerized), NAVOCEANPROFAC Whidbey Island analyzes all arrays, SURTASS and SOSUS, today.[41]

[41] Wilder.

SURTASS Non-Availability

The downsizing caused by budget cuts caused the SURTASS fleet to go from 19 to eight SURTASS ships. There simply are not enough SURTASS ships to perform the required ASW taskings. The first reason is maintenance. There is always one ship in a reduced operating status (ROS), either in port having an array off loaded or under going scheduled maintenance. That means there are three ships available for operations. The second reason is transit time. The fastest a SURTASS ship can transit is 11 knots. If the ship has a long way to go to get to an operating area, transit time can significantly cut into the 90-day mission requirement. Take the Pacific Ocean, for example. SURTASS ships are home ported in Hawaii or Japan. If a SURTASS ship is required to go from Hawaii to the Western Pacific, it takes about seven to ten days, depending on the sea state. That leaves only 70 days, theoretically, to be tail wet with the array in the water. Then, if the SURTASS ship is required to change operating areas and significantly change location, more days are spent transiting vice operating. In the Pacific area of responsibility (AOR), the four ship SURTASS ASW capability usually is one to two ships tail wet, one ship in transit, and one ship in the maintenance cycle. Two ships provide ASW I&W in the Pacific AOR for over 69,000,000 square miles, or 35 percent of the earth.

Research and Development

The significant budget cut of 58 percent not only affected the status of SOSUS and SURTASS but all R&D, and future procurements as well. The numerous budget cuts IUSS has taken since 1989 have brought IUSS to a stand still; it must operate with what it has and no more. Since the 58 percent budget cut in 1993, IUSS has taken small budget

cuts. Taken alone, these cuts are small; however, given the large, up front budget cut, the synergistic affect is much larger. No more SURTASS ships have been procured and the only R&D effort, ADS, keeps slipping to the right because of the budget cuts.

Rating Merger and Analyst Proficiency

The enlisted rating for IUSS analysts was called Ocean Systems Technician (Analyst) (OTA) at the time of the consolidation and downsizing. An OTA would enter IUSS as an E-2 straight out of boot camp and attend an intense analysis course (approximately thirteen weeks) at OTA "A" school. SUBTRAFAC operated the "A" school. The analyst would report to his/her first NAVFAC/NOPF with basic analysis skills. Once at a NAVFAC/NOPF, the OTA completed a three level qualification. The entire qualification process usually took around six to eight years. The highest qualification, Level I, was usually attained as an E-6. The qualifications levels were usually achieved at different IUSS commands.

On 1 October 1997, the OTA rating (as did the maintainers) merged with the STG rating. Because of the merger, consolidation, and downsizing, the OTA "A" school was terminated as was the OTA "C," or follow-on, school at Readiness Training Facility, Dam Neck, Virginia. All IUSS acoustic analysts would be, and are now, trained by Fleet Antisubmarine Warfare Training Center (FLTASWTRACEN), San Diego, California by the STG community. CDR Carol A. Wilder, USN stated that IUSS was not added to the STG curriculum.[42] All IUSS training is conducted at an IUSS facility via CBT (computer-based training).

[42] Wilder.

~ Chapter 5 ~

The typical STG goes to STG "A" school as an E-1 and learns basic acoustics, electronics, and operations. He/she then goes to sea for his/her first tour. IUSS is a second or third tour for an STG. Therefore, an STG reports to IUSS as at least an E-5, providing excellent leadership, but most likely has seen few, if any, acoustic contacts real-time.

Today, eight years after consolidation and downsizing, the acoustic analysts aren't as skilled as they once were. Learning to be an acoustic analyst is an art. It is an art learned over years of experience and constant analysis. The dedicated training and constantly working in a passive acoustic target rich environment is gone. IUSS is the only system that provides acoustic displays that are manned 24 hours a day, 365 days a year. Yet, STGs aren't placed in that environment until six years into their career. And they may only serve at one IUSS facility their entire career. The art of acoustic analysis is being lost.

CDR Wilder stated that the OT/STG merger is working. The STG who was not IUSS-bred has a much better understanding of ASW as well as fleet operations. She stated that the STG finally understands the acoustic analysis when he/she gets to a NAVOCEANPROFAC. She also stated that the Navy realizes the inadequate acoustic analysis training and is re-opening the IUSS acoustic analysis school at SUBTRAFAC.[43]

[43] Wilder.

Chapter 6

ASW/USW Requirement

When the Berlin Wall fell, the need to secure sea lines of communication did not go away. It is a fundamental role of the U.S. Navy. The requirement is found in *Joint Vision 2020* and *Forward . . . From the Sea: Anytime, Anywhere.* There is still a requirement for ASW. The *1998 Department of the Navy Posture Statement*, which has its origins in and is a refinement of . . . *From the Sea* in 1992, clearly specifies the requirement for IUSS. "The IUSS is a model for innovation and technology. . . . SURTASS is far superior to any other shallow-water passive towed-array system. . . . The Fixed Distributed System (FDS) is operational and has demonstrated successfully the ability to detect, classify, and track quiet submarines."[44]

Eight years after the fall of the Berlin Wall, the Soviets still deploy their submarines far from home. "U.S. Navy sources announced that an unusual number of Russian submarines were tracked off the American coastline in the last year [1995-1996]. These included Oscar and Oscar II-class SSGNs, and Akula class SSNs [nuclear submarines], in

[44] Department of the Navy, "Forward . . . From the Sea: Anytime, Anywhere," *1998 Department of the Navy Posture Statement*, n.p., 58-59.

the vicinity of such major US naval facilities such as Kings Bay, Georgia."[45] *The Washington Times* reported deployments in 1994, 1997, and 1999.[46]

The Soviets are selling their submarines to other counties.

> Currently, there are more than 600 submarines around the world operated by 46 different countries (see Table [2]). Over half of these are found in navies outside the United States and Russia. While many of them are in a run-down state, a growing number of these submarines are increasingly modern. Many are found in highly strategic waters, crisscrossed by important sea-lanes and areas of important marine resources. In short, submarines represent a growth industry in naval weapons. As such, they occupy an important niche in maritime operational planning. . . . Thus, the proposition that ASW is no longer necessary in the new security environment simply cannot be maintained in the face of this evidence: the requirement for ASW is alive and well. Naval forces lacking ASW capabilities will be unable to conduct virtually anything but the simplest peacekeeping operations. In littoral operations, one of the principal tasks for submarines will be to sweep the area clean of opposing submarines or to establish a positive contact with them. In order to do this, submarines will have to be capable of going everywhere in the operating theatre, including shallow water.[47]

Mr. Norman Polmar testified before the House Armed Services Committee in 1997 and stated, "the interests of the Russian Federation are not in concordance with those of many of its regional neighbors, and Russia continues to sell its submarine technology to 'countries of concern,' among them Iran and China."[48] In 1999, the *Los Angeles Times*

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[45] "Intelligence Archive: New items compiled between May, 1995 and May, 1996," *Intelligence Archive*, URL: <www.webcom.com/~amraam/curr95.html>, accessed 11 January 2001.

[46] Bill Gertz and Rowan Scarborough, "Sub Games," *The Washington Times*, 4 February 2000, Final Ed., A7 (LEXIS-NEXIS, 19 January 2001).

[47] Paul Mitchell, Deputy Director Academics, Canadian Forces College, "Submarines and Peacekeeping," *University of Calgary Centre for Military and Strategic Studies Home Page*, URL: <www.stratnet.ucalgary.ca/Journal/article3.html>, accessed 9 January 2001.

[48] Norman Polmar, "Statement by Norman Polmar," testimony given to the U.S. Congress, House Armed Services Committee, Military Procurement Subcommittee, hearing on the New Attack Submarine Program, 18 March 1997, 105th Congress, 1st session, 1997, URL: <www.house.gov/hasc/testimony/105thcongress/97-3-18POLMAR.htm.>, accessed 28 January 2001.

	NATIONS	*NATO RIMPAC*	*US*	*USSR RUSSIA*	*WARSAW PACT*	*NON ALIGNED*	*TOTAL*
1980/81	*39*	*173*	*130*	*335*	*14*	*197*	*869*
1985/86	*40*	*173*	*102*	*435*	*12*	*257*	*979*
1990/91	*44*	*173b*	*130*	*329*	*na*	*302*	*934*
1995/96	*46*	*155b*	*99*	*160*	*na*	*249*	*663*
BUILDING	*+1d*	*+20*	*+9*	*+7*	*na*	*+24*	*+60*

Source: Jane's Fighting Ships, 1980/81 - 1995/96, Richard Sharpe (ed.), (Houndswell: Jane's Information Group).
- a: Non-aligned includes such Western states as Sweden, ASEAN, and after 1985/86 Warsaw Pact states excluding Poland, together with those states traditionally termed "non-aligned."
- b: This figure includes Polish submarines as part of the Visegrad group of nations.
- c: This figure represents submarines that are actually building rather than simply proposed. Numbers would be even higher if the latter were included.
- d: Singapore

Table 2: Number of Submarines in the World[49]

reported that China is planning to buy two Russian Typhoon-class nuclear submarines.[50]

Given the above requirement, the question becomes, "does IUSS fulfill this requirement?" The basic fact is this: the Russians still deploy and are selling to other countries the same submarines that IUSS has detected for years. SURTASS, although designed for the deep ocean, blue water Soviet threat, can detect diesel submarines and can operate in littoral waters. CAPT Parrish stated that when he was COMUNDERSEASURV, IUSS demonstrated, through many exercises, that the arrays can detect diesel submarines.[51] This capability retains IUSS as a primary I&W system.

[49] Mitchell.

[50] Times Wire Reports, "China: Beijing Plans To Buy 2 Subs, Reports Say," *Los Angeles Times*, 2 September 1999, Home Ed., A9 (LEXIS-NEXIS, 19 January 2001).

[51] Parrish.

CAPT Parrish and CAPT Marnee L. Finch, USN both felt strongly that the consolidation and downsizing of IUSS was the wrong thing to do.[52] CAPT Parrish was Commodore of COMUNDERSEASURV at the time. He believed there were three basic reasons to keep IUSS intact:

1. Maintaining the quietness of U.S. submarines. IUSS detected and detects today, U.S. submarines. Every detection is required to be reported to the submarine forces. When SOSUS was being developed in the 1950s, the U.S. nuclear submarine force was also developing. It was not until SOSUS reported U.S. nuclear submarines that the U.S. submarine quieting program was developed.

2. Providing other ASW communities with the ability to practice their acoustic analysis. The U.S. Navy still had viable surface, air, and submarine ASW platforms; however, IUSS was the only system with 24 hour, 365 days a year real-time displays. IUSS could be used as a training base for other communities.

3. Dual Use applications. IUSS demonstrated that it had other than ASW uses, e.g., drug interdiction and fisheries protection.

CAPT Finch, who was Chief Staff Officer and then Commander, Undersea Surveillance, U.S. Pacific Fleet (COMUNDERSEASURVPAC), believed, and still believes, IUSS has value:

1. Maintain the infrastructure. Let IUSS determine where to make savings and keep the system viable.

2. I&W. IUSS was, and is, a primary ASW cuing system for other platforms.

[52] Result of two interviews. Finch. Parrish.

Chapter 7

Conclusions

There was not a single event that led to the consolidation and downsizing of IUSS; it was a series of events that happened simultaneously. It was the result of decisions made within the IUSS community that backfired and critical independent reports that IUSS could not refute. These events occurred during a period when the United States was, and is, defining its national strategy toward the Soviet Union. The U.S. military was then, and is now, without a defined military objective. To make such drastic cuts when there was not a clear objective was not the right thing to do.

BRAC clearly did not cause the drastic downsizing of IUSS. BRAC occurred between 1988 and 1995. Although IUSS answered many BRAC data calls, no IUSS capability was cut as a direct result of BRAC. The only casualty was NAVFAC Adak, Alaska; however, this was an indirect result of BRAC as a result of the closure of NAF Adak, Alaska.

There were five overarching factors that contributed to the downsizing of IUSS: January 1992 Commodores' Conference; September 1992 Congressional budget cut; SURTASS GAO study in December 1992; January 1993 Navy budget cut; SOSUS GAO study in May 1993; and the 58 percent budget cut in December 1993. Both GAO studies directly contributed to the 58 percent budget cut.

~ Chapter 7 ~

Consolidation was, and is, good business sense. Consolidation was possible as the result of technological advances. IUSS began consolidating in 1987, before the end of the Cold War. The commodores did the right thing in 1992: they developed a plan to streamline IUSS to save much needed monies and manpower while maintaining operational capability. However, the consolidation decision in 1992 was interpreted by the Navy and GAO as the IUSS requirement decreasing and, thus, was not required any more. The budget cuts caused IUSS to consolidate faster and downsize more than planned.

The GAO studies were conducted prematurely. Both GAO studies were conducted during the time when the DoN scrutinized IUSS. IUSS was trying to justify itself to the DoN as well as two GAO teams at the same time. It was too much going on at the same time. This commotion probably detracted from the ability to focus and provide the proper attention to each effort. This was evidenced by the impact of the GAO studies (58 percent budget cut) and the fact that the reclama to the SOSUS study never made it to Congress for review.

The two GAO independent studies of the same system (IUSS) conducted at the same time should have been conducted as one study. The SURTASS study was conducted November 1991 through July 1992; the SOSUS study was conducted September 1991 through December 1992. The SOSUS GAO study began and ended after the SURTASS study. One has to wonder why the studies were not combined into one and IUSS studied as a whole. By studying SOSUS and SURTASS independently, the GAO teams neglected ADS and FDS, and were not able to fully evaluate the capabilities of and requirement for IUSS. None of these systems were designed to work alone. Nor did the

GAO team state how the air, subsurface and surface units would perform their missions with a scaled down IUSS. It is not clear that the entire IUSS and capabilities were taken into account.

The SOSUS GAO study had a predetermined outcome. First of all, the former action officer at the Office of the CNO recalled the GAO team saying so. Second, it is interesting to note the vast difference in the number of commands each GAO team contacted. The SURTASS study had a very detailed list of commands interviewed. The SURTASS study GAO team conducted a thorough study and came to a conclusion that made sense at the time: cease SURTASS LFA production until the system was operationally tested. The SOSUS GAO study list was very vague; it named three agencies specifically and lumped all others as subordinate commands responsible for ASW. The SOSUS GAO study report gives the impression that not many were interviewed and, thus, the study was not as thorough as the SURTASS GAO study. The SOSUS GAO study team appears to have interviewed the least amount of IUSS customers and yet caused the largest budget cut (58 percent).

The main assumption of the GAO study teams is not valid today: the Soviets will deploy their submarines to the U.S. The requirement for ASW has not gone away eight years later. The Soviets no longer deploy their submarines because of weapon capability (or lack of), but for political reasons. The 1994, 1995, 1996, 1997, and 1999 deployments of Soviet submarines were two fold: to show they can still deploy a submarine and to make a political statement. IUSS remains the primary U.S. Navy asset to provide I&W and initial cuing of submarines for tactical units.

The intangibles of IUSS are what led to the perception by the DoN and GAO that IUSS is unable to detect submarines, including Russian diesel submarines. The shroud of secrecy under which IUSS operated until the end of the Cold War, the user-unfriendly reports to tactical units in the fleet, and not having a supporting program sponsor with a vested interest in the system capabilities contributed to this perception. If no one knows or understands what a program does and how it meets requirements, especially the customer (the fleet) and the holders of the money, the program is the first on the chopping block.

The emphasis on Dual Uses by the IUSS community contributed to the belief that there was not an operational requirement for IUSS. Dual Uses definitely needed to be investigated, but IUSS would have survived the budget cuts and GAO studies better if the emphasis remained on the submarine threat, not just Soviet. Neither the GAO study reports nor the individuals interviewed discussed that other than Soviet submarines existed, that the Soviets would sell their submarines to other countries, that submarines were being produced elsewhere in the world, the extent of the contribution of IUSS to I&W, or placed emphasis on the fact that IUSS can detect diesel submarines.

Consolidation saved IUSS. If it weren't for consolidation, the only other alternative was to have powered down the arrays; in that case, SOSUS would no longer exist. The capability of the system today is not what was intended. When balanced against DoN ASW requirements, IUSS took more than its fair share of the budget cuts during the DoN drawdown. CAPT Finch was spot on: Congress, GAO, and DoN should have let IUSS determine where to make savings and keep the system viable in order to maintain the infrastructure. The nation would have a better I&W system today.

Appendix A

Marine Corps University Audio/Video Memoir Program Participant Agreement

Marine Corps University
Audio/Video Memoir Program
participant Agreement

The purpose of the Marine Corps University Audio/Video Memoir Program is to gather and preserve reminiscences of historical and scholarly value to support the Professional Military Education programs of the Marine Corps University (MCU). Interviews will be made in both video and audio format and will be made available to MCU students, civilians, scholars, and others with an interest in documenting, reporting, researching, and analyzing the history or the Marine Corps. All memoirs are subject to excerpt and publication as a result of these activities.

I, ROBIN ATKINS, have read the above and in view of research value of this memoir, voluntarily permit the Marine Corps University Research Archives to make full use of this interview subject to the mutually agreed to restrictions attached. I hereby assign all current and future rights of every kind whatever pertaining to this interview and subsequent interviews in the series, both during my lifetime and after my death, whether or not such rights are now known, to the Marine Corps University.

Robin Atkins
Participant Signature

11/30/06
Date

Marine Corps University
Audio/Video Memoir Program
Participant Agreement

The purpose of the Marine Corps University Audio/Video Memoirs program is to gather and preserve reminiscences of historical and scholarly value to support the Professional Military Education programs of the Marine Corps University. Interviews will be made in both video and audio format and will be made available to MCU students, civilians scholars, and others with an interest in documenting, reporting, researching, and analyzing the history or the Marine Corps. All memoirs are subject to excerpt and publication as a result of these activities.

I, MARILEE L FINCH, have read the above and in view of research value of this memoir, voluntarily permit the Marine Corps University Research Archives to make full use of this interview subject to the mutually agreed to restrictions attached. I hereby assign all current and future rights of every kind whatever pertaining to this interview and subsequent interviews in the series, both during my lifetime and after my death, whether or not such rights are now known, to the Marine Corps University.

Participant Signature

18 JAN 01
Date

Participant Agreement

The purpose of the Marine Corps University Audio/Video Memoirs program is to gather and preserve reminiscences of historical and scholarly value to support the Professional Military Education programs of the Marine Corps University. Interviews will be made in both video and audio format and will be made available to MCU students, civilians scholars, and others with an interest in documenting, reporting, researching, and analyzing the history or the Marine Corps. All memoirs are subject to excerpt and publication as a result of these activities.

I, JOHN M. PARRISH, have read the above and in view of research value of this memoir, voluntarily permit the Marine Corps University Research Archives to make full use of this interview subject to the mutually agreed to restrictions attached. I hereby assign all current and future rights of every kind whatever pertaining to this interview and subsequent interviews in the series, both during my lifetime and after my death, whether or not such rights are now known, to the Marine Corps University.

John Parrish
Participant Signature

6 JANUARY 2001
Date

Marine Corps University
Audio/Video Memoir Program
Participant Agreement

The purpose of the Marine Corps University Audio/Video Memoirs program is to gather and preserve reminiscences of historical and scholarly value to support the Professional Military Education programs of the Marine Corps University. Interviews will be made in both video and audio format and will be made available to MCU students, civilians scholars, and others with an interest in documenting, reporting, researching, and analyzing the history or the Marine Corps. All memoirs are subject to excerpt and publication as a result of these activities.

I, CAROL A. WILDER, have read the above and in view of research value of this memoir, voluntarily permit the Marine Corps University Research Archives to make full use of this interview subject to the mutually agreed to restrictions attached. I hereby assign all current and future rights of every kind whatever pertaining to this interview and subsequent interviews in the series, both during my lifetime and after my death, whether or not such rights are now known, to the Marine Corps University.

Participant Signature

12-18-00
Date

Appendix B

Interview Questions

TOPIC	QUESTION
Admin	What was your role in consolidation?
Admin	What years were you employed in that role?
Admin	What is correct spelling of your name?
Admin	Whom else should I talk to?
Admin	Recommended references/documents?
Admin	Get release signature
Budget	Cost to develop SOSUS? SURTASS?
Budget	Cost to implement SOSUS? SURTASS?
Budget	Cost to maintain SOSUS? SURTASS?
Budget	Savings gained by shutting down SOSUS? Decreasing SURTASS?
Budget	What was impact of BRAC on consolidation decision?
Budget	Manpower savings?
Consolidation	When was it decided to consolidate IUSS?
Consolidation	Who/what directed consolidation of IUSS?
Consolidation	Why was it decided to permanently shut off some arrays?
Consolidation	What are/were "improved sensors" to cover regions previously covered by fixed?
Consolidation	Where is improvement in C4ISR?
Consolidation	When was decision made to consolidate?
Consolidation	Was the 1992 Commodore's Conference the driving force in consolidation?
Consolidation	Is consolidation working?
Consolidation	Was consolidation CUS, CNO, BRAC, strategic need, or post-Cold War drawdown driven?
Strategic	What was the threat, current and future, when consolidation decision was made? Was this a factor in consolidation?
Strategic	Was China considered in the decision of "decreased threat," i.e., Soviets no longer threat after Cold War?
Strategic	Impact of drastically decreasing IUSS assets?
Strategic	Why so away with a system when we are the only nation with such an advanced system?
Strategic	Is there a current/future need for IUSS?

Strategic	Impact of shutting Adak down?
Strategic	Do you still abide by hot standby or monitor all arrays?
Strategic	What are your concerns today?
Strategic	Is the customer happy with IUSS cuing (CTF 12, PATWING10)
Targets	How many targets "missed" since consolidation of arrays? (SURTASS/SOSUS)
Technology	Did technology play a factor in shutting down arrays? (arrays so old won't detect anything)
Technology	Was the noise quieting programs of USSR/China a factor in consolidation decisions?
Technology	Why do away with a 1 of a kind system if there is no replacement ready?
Technology	How maintain operator proficiency if technology gone?

Appendix C

CNO Classification Approval Letter

DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
2000 NAVY PENTAGON
WASHINGTON, D.C. 20350-2000

IN REPLY REFER TO

5500
Ser N774C1/1U653374
4 Apr 01

From: Chief of Naval Operations (N&74)
To: United States Marine Corps Command and Staff College, Marine Corps University, 2076 South Street, Quantico, VA 22134-5068, Attn: CDR Dawn M. Maskell, USN

Subj: REVIEW OF MASTER OF MILITARY STUDIES THESIS, "THE NAVY"S BEST-KEPT SECRET: IS IUSS BECOMING A LOST ART?

Ref: (a) USMC E-Mail (TECOM) CDR Maskell of 22 Mar 01
(b) SECNAVINST 5510.36, Information Security Program Regulation of 17 Mar 99

1. As requested in reference (a), subject document has been reviewed for proper classification. The content of the thesis is unclassified.

2. As designated by reference (b), Head, Undersea Surveillance Branch (N774) is the Original Classification Authority (OCA) for the Integrated Undersea Surveillance System (IUSS).

3. As stated in the disclaimer, opinions and conclusions in the paper are those of the author. The review of subject publication conducted by this office was, therefore, limited to an assessment of classification and does not constitute endorsement of the thesis.

4. CNO point of contact in this matter is Mr. Robert Cepek, N774C1, COM: 703-601-1688 or DSN: 329-1688.

S. C. MILLER, III
Head, Undersea Surveillance

Glossary

ADS	Advanced Deployable System
AOR	Area of Responsibility
ASW	Antisubmarine Warfare
BOS	Base Operating Support
BRAC	Base Realignment and Closure
BUSHIPS	Bureau of Ships
CBT	Computer-Based Training
CINCLANTFLT	Commander in Chief, U.S. Atlantic Fleet
CINCPACFLT	Commander in Chief, U.S. Pacific Fleet
COMASWFORLANT	Commander, Antisubmarine Warfare Forces, U.S. Atlantic Fleet
COMASWFORPAC	Commander, Antisubmarine Warfare Forces, U.S. Pacific Fleet
COMSUBLANT	Commander, Submarine Force, U.S. Atlantic Fleet
COMUNDERSEASURV	Commander, Undersea Surveillance
COMUNDERSEASURVPAC	Commander, Undersea Surveillance, U.S. Pacific Fleet
CNO	Chief of Naval Operations
COSL	Commander, Oceanographic System Atlantic
COSP	Commander, Oceanographic System Pacific
CUS	Commander, Undersea Surveillance
DESRON	Destroyer Squadron
DoD	Department of Defense
DoN	Department of the Navy
FDS	Fixed Distributed System
FLTASWTRACEN	Fleet ASW Training Center
GAO	General Accounting Office
I&W	Indications and warning
IUSS	Integrated Undersea Surveillance System
JMF	Joint Maritime Facility
LFA	Low Frequency Active
LOFAR	Low Frequency Analyzer and Recorder Gram
MF&T	Mission, Functions, and Tasks
MSC	Military Sealift Command
NAF	Naval Air Facility
NAVFAC	Naval Facility
NAVOCEANPROFAC	Naval Ocean Processing Facility
NOPF	Naval Ocean Processing Facility

NRL	Naval Research Laboratory
O&M	Operations and Maintenance
OPCON	Operational Control
OTA	Ocean Systems Technician (Analyst)
R&D	Research and Development
ROC/POE	Required Operational Capability/Project Operational Environment
ROS	Reduced Operating Capability
SOFAR	Sound Fixing and Ranging
SOSUS	Sound Surveillance System
SPAWAR	Space and Naval Warfare Systems Command
STG	Sonar Technician (Surface)
SUBTRAFAC	Submarine Training Facility
SURTASS	Surveillance Towed Array Sensor System
SWATH	Small Waterplane Twin Hull
TACON	Tactical Control
TYCOM	Type Commander
USW	Undersea Warfare

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